Amendments to the Specification:

After the title, please insert the following subheading and paragraph:

Cross-Reference to Related Applications

[0001] This application is entitled to the benefit of and incorporates by reference essential subject matter disclosed in International Application No. PCT/DK03/00243 filed on April 11, 2003 and Danish Patent Application No. PA 2002 00572 filed on April 17, 2002.

Before paragraph **[0002]**, please insert the following subheading:

Field of the Invention

Before paragraph **[0003]**, please insert the following subheading:

Background of the Invention

Before paragraph **[0009]**, please insert the following subheading:

Summary of the Invention

Please replace paragraph **[0009]** with the following amended paragraph:

[0009] ~~This is achieved with~~ The present invention resides in one aspect in a method for measuring currents in a motor controller using switching power semiconductors, where the current is measured by a current sensing device placed on a motor phase and generating an output signal which is transmitted to a receiving unit whereafter the signal is sampled with an oversampling frequency during a switching period of the power semiconductors, said samples being digitally filtered for maintaining symmetry of the samples with respect to a centre line of the switching period, whereafter an average value of the samples is calculated.

Before paragraph **[0032]**, please insert the following subheading.

Brief Description of the Drawings

Before paragraph **[0039]**, please insert the following subheading.

Detailed Description of the Preferred Embodiments

Please replace paragraph **[0047]** with the following amended paragraph:

[0047] A typical phase current (e.g. i_w) sensed by the current transducer 10 is shown in figure 3 along with a phase-phase PWM output voltage V_{PWM}. The PWM switching frequency is 4.5 kHz. The phase current contains a ripple current (higher harmonics) related to the digital nature of the output voltage fed to the 3-phase induction motor 6 loading the motor controller. The ripple current is an undesirable disturbance. The parameter of interest is the fundamental output current when controlling the motor. Additionally to the PWM generated ripple current and as mentioned earlier, noise is superimposed on the current due to internal switchings in the current transducer ~~noise~~ and due to noise picked up during the signal transmission to the A/D-converter. Doing the oversampling with an even number of samples during a switching period, summing the samples and then averaging them by dividing with the number of samples minimizes the impact of the noise. Figure 6 gives a simultaneous view of the PWM pulse shapes on the motor phase U,V and W during a switching period. At the shown "sample instant" the three phase currents are sampled simultaneously. In the middle of the switching period a centre line is shown, and the left and right-side sample instants are preferably placed symmetrically in pairs around this centre line. Thus, a mirror sample is taken a time T from the centre line, which corresponds to the same time distance from the first sample instant to the centre line. Only a single "sample instant" and its mirror are shown. Several evenly distributed sample instants are of course required to obtain a satisfactory effect of the oversampling.

Please replace paragraph **[0048]** with the following amended paragraph:

[0048] In Fig.1, circuit blocks 7,8,9,11,12 and 13 are implemented in a Digital Signal Processor of the type C2407xx by manufacturer Texas Instruments. The DSP is programmed to run a space-vector PWM at a switching frequency of 3030 Hz. The A/D converter 13 of the DSP is ~~was~~ setup to sample each of the two phase current signals at a rate of 5 μs each. Hence, 66 samples are available per current signal per switching period to calculate the average current. A 400 Vrms, 3 kW induction motor was fed via a screened motor cable of 150 m giving heavy capacitive charging current each time the frequency converter is switched. To exclude "bad" current samples disturbed by the capacitive charging of the motor cable etc, a given sample is sorted out if it is within a given time interval from the last PWM switching according to the inventive method. Sorting out is done by the controller 7 using processor unit 12

(Fig.1), where a register holds the digitalized data. Controller 7 has access to this register and conditions the data by sorting out digital samples that are sampled in a predefined region around a switching of a transistor. E.g. if a sample is taken on current i_w shortly after T1 has been opened, then this sample will be skipped. The period in which no samples are accepted equals a blanking time. The blanking time depends on parameters like the response time of the switching transistors, the switching frequency and especially on the length of the motor cables.